WINFORUM

Wireless Information Networks Forum, Inc.

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Mr. Julius Knapp
Federal Communications Commission
435 Oakland Mills Road
Columbia, MD 21046

Dear Mr. Knapp,

WINForum proposes clarifications to Part 15 subpart D, sections 15.321(b) and 15.321(c)(4). We believe that these clarifications are consistent with the intent of the affected sections and that they are necessary to ensure that asynchronous UPCS systems are not required to execute a very burdensome, dynamic spectrum search and frequency avoidance regimen.

Section 15.321(b) says:

(b) All systems of less than 2.5 MHz emission bandwidth shall start searching for an available spectrum window within 3 MHz of the sub-band edge at either 1910 or 1920 MHz, while systems of more than 2.5 MHz emission bandwidth will first occupy the center half of the sub-band. Devices with an emission bandwidth of less than 1.0 MHz may not occupy the center half of the sub-band if other spectrum is available.

We propose the following clarifications to this rule. In summary we believe and seek to clarify that:

1. The intent of this rule is to alleviate a condition in which the listen before talk (LBT) access rules require judicious frequency assignments in order to assure orderly coexistence when systems of different bandwidth operate in the same immediate vicinity.

2. The rule applies only at system startup in the case of systems that automatically search, or at system installation time for other systems. It does not require systems to monitor any frequencies other than those they have initially chosen.

3. "Spectrum is available," in this context, means that received power is below threshold AND the UPCS device has the optional capability to tune, or be tuned, to the spectrum.

The asynchronous LBT rules require devices, after using a channel for a short period, to turn off carrier on that channel and contend again for access. This creates a quiet condition on the channel and permits fair access to other devices. However the rules do not require narrow bandwidth systems to coordinate the quiet intervals so that a complete wider spectrum slot will be fully quiet at these regular intervals. This can lock out a wideband system in some cases. It is in the best interest of the users if means are provided in this circumstance to assign operating frequencies such that a wide bandwidth system and a narrow bandwidth system avoid using the same bandwidth segment when necessary and possible. We interpret rule 15.321(b) to establish the convention that for such instances the middle portion of the subband should be used for the wider bandwidth systems and the edges of the subband be used by the

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narrow bandwidth systems.

We proposed the following interpretation of 15.321(b) for various system classifications:

1. Non-tunable systems
   Systems in which the frequency cannot be changed at or after installation should be tuned to the recommended portions of the subband. That is, narrow bandwidth systems should be tuned to the band edges and wide bandwidth systems should be tuned to the mid band.

2. Tunable systems that do not have an automatic search provision.
   Systems that are tunable at installation but that do not automatically adjust frequency assignments (search) should have a provision allowing them to be tuned to the appropriate segments of the sub band when necessary. That is, narrow bandwidth systems should be tunable to the band edges and wide bandwidth systems should be tunable to the mid band.

3. Tunable systems that dynamically search for available frequency segments.
   15.321 (b) applies to this system type but it requires some further clarification.
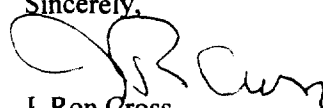
The word "searching," in 15.321(b) should be interpreted such that narrow band systems cannot transmit centered on any frequency in the center half of the subband until after they have executed observation windows in each of the 2 outer 3 MHz segments and observed power above the deference threshold in both cases.

Systems should be required to search only at system start-up time and, once established on any frequency, a system should be free to remain there.

15.321(c)(4) says:
   (4) After completion of a transmission, an individual device or cooperating group of devices must cease transmission and wait a deference time randomly chosen from a uniform random distribution ranging from 50 to 750 microseconds, after which time an attempt to access the band again may be initiated. For each occasion that an access attempt fails after the initial inter-burst interval, the range of the deference time chosen shall double until an upper limit of 12 milliseconds is reached. The deference time remains at the upper limit of 12 milliseconds until an access attempt is successful. The deference time is re-initialized after each successful access attempt.

"Access attempt," here and throughout part 15 subpart D, should be interpreted to mean only the execution of a 50 microsecond observation window on the frequency on which a transmission is intended, and should not imply any obligation to examine other parts of the subband to satisfy 15.321(b) which, as discussed above, applies only at system start-up time.

Sincerely,

J. Ron Cross
President

cc: Gen. Docket 90-314